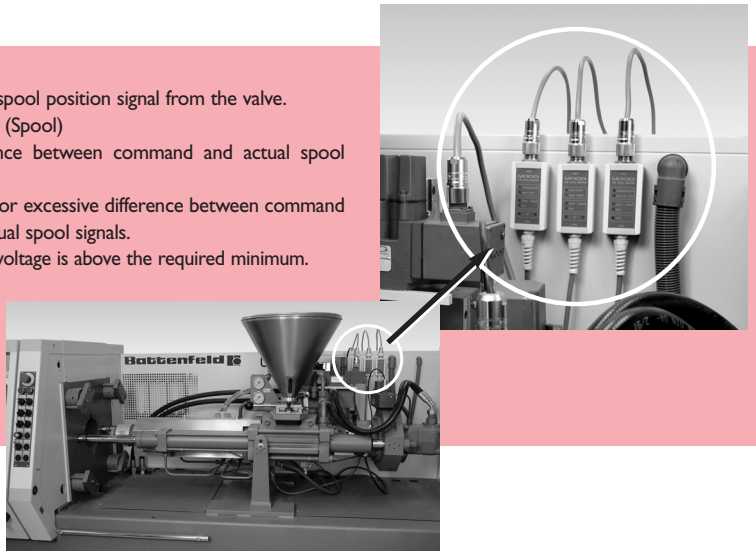
MOOG

G040-122
EFB Valve Monitor

The G040-122 is a low cost valve monitor that visually shows the operating condition of most Moog electrical feedback (efb) servo or proportional valves. It provides LED status indication of the valve command, spool position, drive error and power. The valve monitor can be used as a first level fault finding tool by being connected temporarily or permanently to the valve. The monitor is fitted 'inline' between the valve and electrical connector; i.e. it connects to the existing electrical connector with no external connections required.
The monitor LED indicators provide:
Command – Spool position command input to the valve.
Spool – Actual spool position signal from the valve.
(Cmd) - (Spool)
– Difference between command and actual spool signals.
Error – Alarm for excessive difference between command and actual spool signals.
Power – Supply voltage is above the required minimum.



SPECIFICATIONS

Power Supply Current
24 V: 40 mA, all LED's illuminated
±15 V: ±40 mA, all LED's illuminated
Power Supply Voltage
24 V: 18 V to 36 V
±15 V: ±12 V to ±18 V
Size:
7.1L x 2.1W x 1.2H in
[180L x 54W x 30H mm]
Weight:
.2 lbs [95 g]
Valve cable length:
6.5 ft [2.0 m]
EMC:
EN50081-1 emission
EN50082-2 immunity
Protective Earth:
EN60204-1 equal potential

Full LED Illumination (% of spool stroke)	
Command:	100%
Spool:	100%
(cmd)-(spool):	20%
LED Threshold, Error:	>20%
24 V:	>20 V
±15 V:	>±13 V

Current Sample Resistance:
100 Ohm

FEATURES

- First level of fault finding
- Single LED for each valve signal
- LEDs show level and polarity of signals
- Permanent or temporary installation
- Low cost
- In line operation
- Small size
- CE marked

ORDERING DETAILS

The valve monitor is supplied with a two meter cable for connection to the valve. This cable does not have a connector installed. See Page 2 for connector ordering details.

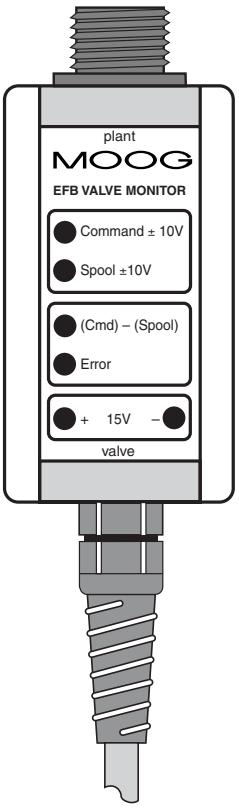
Add "C" to the model number if you want to have the valve monitor supplied with a connector installed on the valve cable i.e. G040-122-A001 becomes G040-122-A001C with a connector installed.

Model Dash No.	Supply	Connector	Cmd. Signal	Spool signal
C–A001	24 V	6 + PE	±10 V	2.5 V to 13.5 V
C–A002	24 V	6 + PE	±10 V	4-20 mA
C–A003	24 V	6 + PE	±10 mA	4-20 mA
C–A004	24 V	11 + PE	±10 V	±10 V diff
C–A005	24 V	11 + PE	±10 mA	±10 V diff
C–A006	±15 V	6 + PE	±10 V	±10 V
C–A007	±15 V	6 + PE	±10 mA	±10 mA
C–A008	±15 V	12 Pin	±10 V	±10 V
C–A009	±15 V	12 Pin	±10 mA	±10 mA
C–A010	24 V	6 + PE	4-20mA	4-20 mA
C–A011	±15 V	6	±10 V	± 2V
C–A012	24	6	±10 V	3-15mA
C–A106	±15 V	6	±10 V	±10 V
C–A107	±15 V	6	±10 mA	±10 mA

INSTALLATION

1. **Connector Termination**
   Each valve monitor has a tag attached to the valve cable that specifies the pinout and shows how to cut and terminate the cable for an EMI backshell connector.
   Appropriate connectors are:
   6+PE C31186 with EMI backshell
   C31187 with standard backshell
   11+PE B97024-111 with EMI backshell (only)
   12 pin B97027-012 with EMI backshell
   C31375 with standard backshell
   Note: The standard backshell does not allow the cable screen to be electrically connected to the connector body.

2. **Mounting**
   Attach the wall mount bracket and slide the valve monitor down on the bracket to lock it into place.
   Disconnect the plant cable from the valve and connect it to the "plant" connector on the monitor. Connect the monitor "valve" cable to the valve.



OPERATION

1. **Command:**
   This dual color LED indicates the polarity and level of the command signal to the valve. Red for positive and green for negative polarity.
2. **Spool:**
   The spool signal output from the valve is indicated by this dual color LED. Red for positive and green for negative. The command and spool LED's should track in brightness and polarity when the valve is functioning correctly.
3. **(Cmd) – (Spool):**
   This LED shows the difference between the command and spool signals. During normal operation there will be small differences between these signals and so this LED should illuminate slightly. During static operation there should be very little illumination. Full brightness occurs when the difference is 20% of full spool stroke.
4. **Error:**
   The proportional band of the position control loop in the valve is approximately ±20% of spool stroke. If the difference between command and spool exceeds 20% of spool stroke, the ERROR LED will illuminate, indicating a possible valve problem.
5. **Supply:**
   For 24 V valves this LED illuminates if the supply is above 20 V.
   For ±15 V valves each LED illuminates if each supply is greater than 13 V.

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